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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANT : Dimitra Gorokhovik
SERIAL NO. : 10/084,721 EXAMINER : A. A. Caschera
FILED : February 25, 2002 ART UNIT : 2676
FOR : METHOD OF CONTROLLING THE DISPLAY OF A
CHARACTERBASED ON A DYNAMIC CODE GENERATION

SUBSTITUTE APPEAL BRIEF TRANSMITTAL LETTER

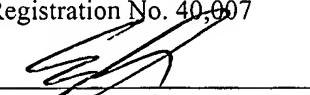
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Dear Sir:

Appellants respectfully submit three copies of a Substitute Appeal Brief For Appellants that includes an Appendix with the pending claims. The Substitute Appeal Brief is now due on October 13, 2005.

Should the Examiner deem that there are any issues which may be best resolved by telephone communication, kindly telephone Applicants undersigned representative at the number listed below.

Respectfully submitted,
Russell Gross
Registration No. 40,007


By: Steve Cha
Attorney for Applicant
Registration No. 44,069

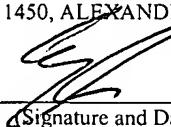
Date: October 12, 2005

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Steve Cha, Reg. No. 44,069
(Name of Registered Rep.)


(Signature and Date)

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Before the Board of Patent Appeals and Interferences

In re the Application

Inventor : Dimitra Gorokhovik
Application No. : 10/084,721
Filed : February 25, 2002
**For : Method of Controlling the Display of a Character
Based On a Dynamic Code Generation**

APPEAL BRIEF

On Appeal from Group Art Unit 2676

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I. REAL PARTY IN INTEREST

The real party in interest is the assignee of the present application, U.S. Philips Corporation, and not the party named in the above caption.

II. RELATED APPEALS AND INTERFERENCES

With regard to identifying by number and filing date all other appeals or interferences known to Appellant which will directly effect or be directly affected by or have a bearing on the Board's decision in this appeal, Appellant is not aware of any such appeals or interferences.

III. STATUS OF CLAIMS

Claims 1-8 have been presented for examination. All of these claims are pending, stand finally rejected, and form the subject matter of the present appeal.

IV. STATUS OF AMENDMENTS

The Amendments made to the claims in response to an Office Action, dated December 8, 2003, were entered. No Amendments were made to the claims in response to an Office Action dated May 11, 2004.

V. SUMMARY OF CLAIMED SUBJECT MATTER

The claimed invention is a method (claim 1), device (claim 4), an apparatus (claim 7) and computer program product (claim 8) that controls the display of a character based on a dynamic code generation. The method for controlling the

character display, as recited in claim 1, includes a summary description (DES) of a character included in a database, and the generation of an executable code (BIN) from the summary description (DES) and the execution of the executable code (BIN) corresponding to the character so as to display the character on the output apparatus, wherein generating the executable code comprises two substeps: a step of extracting, from the summary description (DES) of the character, a nonexecutable symbolic code (SYM) defining actions for coloring in points on the output apparatus and a step of dynamic generation, from the symbolic code (SYM), of the executable code (see Abstract). .

The device, as recited in claim 4, for controlling the display of at least one character has access to a database containing a summary description (DES) of the character and further includes a generation module, related to the database, that is intended to generate executable code (BIN) from the summary description of the character, an execution module, coupled to the storage apparatus and to the output apparatus, the execution module intended to execute the executable code (BIN) corresponding to the character so as to display the character on the output apparatus (DIS), wherein the generation module (GEN) further includes means (RAS) of extracting, from the summary description (DES) of the character, a nonexecutable symbolic code (SYM) defining actions for coloring-in points on the output apparatus and means of dynamic generation (DYN) , from the symbolic code (SYM) of the executable code (BIN). (See Figure 1 and paragraph. 30)

The apparatus claimed in claim 7 recites a means of accessing a data base and a device as recited in claim 4 (see Figure 3 and paragraph 61).

The computer program product, (see paragraph 23) as recited in claim 8, for controlling the display of at least one character on an output apparatus intended to display, provides access to a database containing a summary description (DES) of the character and computer instructions for the generation of an executable code from the summary description (DES) and the execution of the executable code (BIN) corresponding to the character so as to display the character on the output apparatus, wherein generating the executable code comprises two substeps: extracting, from the summary description (DES) of the character, a nonexecutable symbolic code (SYM) defining actions for coloring in points on the output apparatus and a step of dynamic generation, from the symbolic code (SYM), of the executable code.

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

The grounds of rejection to be reviewed on appeal are:

1. claims 1, 2, 4, 5, 7, and 8 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Guha. (U.S.P No. 6,005,588); and
2. claims 3 and 6 stand rejected under 35 U.S.C. § 103(a) over Guha in view of Colletti (U.S.P. No. 5,990,907).

VII. ARGUMENT

1. 35 USC §103 Rejection of claims 1, 2, 4, 5, 7 and 8

The rejection of claims 1, 2, 4, 5, 7 and 8 is in error because the reference fails to show a limitation cited in the independent claims 1, 4, 7 and 8. Claims 2 and 5 depend from claims 1 and 4, respectively.

The invention recited in instant claim 1, which is typical of the subject matter recited in each independent claim, recites the generation of an executable code (BIN) from a summary description (DES) of characters that are stored in a database and the execution of the executable code (BIN) corresponding to the character so as to display the character on the output apparatus, wherein generating the executable code comprises two substeps: a step of extracting, from the summary description (DES) of the character, a nonexecutable symbolic code (SYM) defining actions for coloring in points on the output apparatus and a step of dynamic generation, from the symbolic code (SYM), of the executable code.

In contrast, Guha teaches a system and method for displaying text data in a graphical user interface that includes a two-step process. The first step is an initialization phase wherein characters in a character set are provided to a Renderer (203) which generates bitmap representations of the provided characters. The bitmap representation is stored in a frame buffer (106). The bitmap representation is then used as a template to generate executable code that is subsequently stored. The second step is to use the stored generated executable code for formulation of the character on a display screen. Guha, thus, teaches the pre-formation of executable code(s) for each character in a character set(s) and then the use of the executed codes to generate any character in any provided character set. (See, col. 4, lines 29-32, which state, “[o]nce initialization module 202 has completed its operations, real-time use of system 100 may commence using display module 209 in order to achieve the high-speed display of text on display screen 105.”).

Guha, further, teaches that the executable code is stored. (see col. 4, lines 61-67, which state in part, [e]xecutable character generation code 208 is stored in RAM 102 or in disk drive 103 for later use by display module 209.”).

In the Final Office Action, dated May 11, 2004, the examiner rejected the claims 1, 2, 4, 5, 7 and 8 in view of Guha, because Guha, allegedly, discloses the subject matter recited therein but “does not explicitly disclose storing the character sets in a database... One of ordinary skill in the art, ... would have expected Applicant’s invention to perform equally well with the inherently taught feature of storing character sets in a random-access memory.” (See page 3, FOA, May 11, 2004).

The applicant respectfully submits that Guha does not disclose, suggest or motivate an artisan to develop the novel features of the present invention because Guha does not disclose the elements of the invention, and Guha further, specifically teaches away from the feature that the examiner believes is “inherent” and renders the invention obvious. In supporting the rejection of the claims, the examiner has interpreted or drawn analogies between subject matter recited in the claims and elements taught by Guha. More specifically, the examiner states that “the character sets of Guha [are] equivalent to the summary description of applicant’s claims,” “the character bitmaps [are] functionally equivalent to the nonexecutable symbolic code,” and “the process of scanning ... [is] functionally equivalents to performing a dynamic generation step.” Although, applicant disagrees with the examiner’s interpretation of the terms between the instant application and the cited reference, applicant will use the terms interchangeable, herein, in order distinguish the subject matter claimed from the elements in reference cited.

With regard to independent claim 1, which is typical of the remaining independent claims, this claim is distinguished over the reference cited by virtue of the step of “extracting, from the summary description of said character, a nonexecutable symbolic code defining actions for coloring in points.”

More specifically, Guha teaches that a bitmap (symbolic code) is generated from information representative of a character in the character set. (See col. 5, line 36, which states “[r]enderer 203 forms bitmap 402”). Further, the generated bitmap is stored in a temporary area for subsequent processing. (See, col. 5, lines 24-25, which state, “[r]ender 203 prints, or ‘renders’ 302 the character set to some area of memory such as frame buffer 106.”). The temporary nature of the frame buffer is clearly expressed by Guha in col. 3, line 67 - col. 4, line 3, which state "frame buffer 106 is an area of memory that may be used as a workspace and is also used for drawing output prior to its display by display screen 105." (emphasis added).

Hence, Guha teaches that the bitmap is generated from the, unstored, character set and the bitmap is then stored in a re-useable, temporary, area for subsequent processing. Guha fails to teach extracting the bitmap (symbolic code) from the character set (summary description) because the bitmap is not stored in the summary description.

In fact, Guha specifically teaches away from storing either the bitmap or the character set as this would increase storage requirements and utilize resources. (See, for example, col. 1, lines 25-41, which state in part, "[t]here are many well-known techniques for displaying text on a screen. One such technique involves storage of a bitmap for each character in a character set... A disadvantage of such a technique is that it requires storing and loading a distinct set of bitmaps for each font, which consumes

system resources and can slow down the display. ... Display may be even slower if bitmaps must be individually loaded from data storage as needed.”).

One would not look to Guha to store bitmaps or character sets because such storage is a disadvantage that the Guha seeks to overcome. Thus, the feature of storing the character sets cannot be considered an inherent feature or a design consideration, as suggested by the examiner, because Guha specifically discusses the disadvantages of storing the bitmaps or the character sets.

Although, applicant has used the terms bitmap and symbolic code interchangeably to illustrate comparable steps, applicant further disagrees with the examiner’s interpretation. Guha, describes the bitmap as including “a grid of pixels 403, some of which are activated as indicated by 404 to form an approximation of the shape of character 401.” (See col. 5, lines 36-40). Such a representation of a bitmap is well-known art and is essentially a passive representation of the associated character.

The symbolic code of the instant invention, on the other hand, is non-executable code that provides instruction for generating the executable code. In one embodiment, shown in Figure 2a, and described on page 7 of the instant application, the symbolic code is represented in a tree-like structure. In another embodiment, the symbolic code may be a code sequence. (See page 8 of the instant application, line17).

The symbolic code of the instant invention can not be interpreted to be the same as the Guha bitmap because program instructions are executed on the bitmap to determine the resultant executable code, whereas the symbolic code provides instruction for determining the executable code. Applicant submits that the interpretation of the bitmap as the functionally equivalent of the symbolic code is not correct as the bitmap

does not provide instruction for determining the executable code.

It is respectfully submitted that it was held by *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991) that in order to establish a *prima facie* case of obviousness, three basic criteria must be met;

1. there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or combine the reference teachings;
2. there must be a reasonable expectation of success; and
3. the prior art reference must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must be found in the prior art, and not based on applicant's disclosure.

With regard to the invention as recited in claim 1, Applicant respectfully submits that none of the three basic criteria have been met, thus a *prima facie* case of obviousness has not been set forth.

Furthermore, Applicant respectfully submits that Manual of Patent Examining Procedure (MPEP), Eight Edition, Rev. 2, May 2004, also provides another appropriate instruction by which the instant Appeal should be judged. MPEP §2143.01 provides in the subsections entitled:

Fact That The Claimed Invention Is Within The Capabilities Of One Of Ordinary Skill In The Art Is Not Sufficient By Itself To Establish *PRIMA FACIE* Obviousness.

"A statement that modification of the prior art to meet the claimed invention would have been "well within the ordinary skill of the art at the time the claimed invention was made" because the references relied upon teach that all aspects of the claimed invention were individually known in the art is not sufficient to establish a *prima facie* case of obviousness without some objective reason to combine the teachings of the references." *Ex parte*

Levengood 28 USPQ2d 1300 (Bd. Pat. App. & Inter. 1993).
MPEP §2143.01, p. 2100-131.

The Proposed Modification Cannot Change The Principle Of Operation Of A Reference.

“If the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious” (*In re Ratti*, 270 F.2d 810, 123 USPQ 349 (CCPA 1959)). MPEP §2143.01, p. 2100-132.

As stated previously, Guha describes the disadvantages of storing the bitmaps. Hence, the inherent feature of storing the character sets, which the was suggested to be within the skill of the art, would change the principle of operation of Guha. For these reasons, also, applicant respectfully submits that a *prima facie* case of obviousness has not been set forth.

With regard to independent claims 4, 7 and 8, these claims were rejected for the same reason stated in rejected claim 1. Claims 4, 7 and 8 include subject matter similar to that recited in claim 1. Hence, for the remarks made with regard to claim 1, which are repeated in overcoming the rejection of claims 4, 7 and 8, Applicant respectfully submits that a *prima facie* case of obviousness has not been set forth.

With regard to dependent claims 2 and 5, these claims depend from claims 1 and 4, respectively. Applicant respectfully submits that these claims are allowable at least for their dependence upon allowable base claims, without even contemplating the merits of the dependent claims, as it was held by *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) that if an independent claim is non-obvious under 35 U.S.C. §103(a), then any claim depending therefrom is non-obvious.

2. 35 USC §103 Rejection of claims 3 and 6

The rejections of claims 3 and 6 are in error because the references fail to show a limitation cited in the independent claims 1 and 4, from which they depend.

With regard to dependent claims 3 and 6, these claims depend from claims 1 and 4, respectively. Applicant respectfully submits that these claims are allowable at least for their dependence upon allowable base claims, without even contemplating the merits of the dependent claims, as it was held by *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) that if an independent claim is non-obvious under 35 U.S.C. §103(a), then any claim depending therefrom is non-obvious.

VIII. CONCLUSION

In view of the law and facts stated herein, it is respectfully submitted that the teachings of the cited references fail suggest the claimed invention and the burden of showing that Guha discloses all of the features, expressly or inherently, recited in the claims has not been met.

In view of the above analysis, it is respectfully submitted that the referenced teachings fail to render obvious the subject matter of any of the present claims. It is respectfully requested that this Honorable Board reverse all grounds of rejection stated in the Final Office Action.

Respectfully submitted,

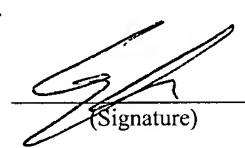
Russell Gross
PTO Registration No. 40,007


By: Steve Cha
Attorney for Applicant
Registration No. 44,780

Date: October 12, 2005

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Steve Cha, Reg. No. 44,069
(Name of Registered Representative)

IX. CLAIMS APPENDIX

The claims which are the subject of this appeal are as follows:

1. A method intended for controlling the display of at least one character on an output apparatus, a summary description of said character being included in a database, said method comprising the following steps:

generation of an executable code from the summary description of said character,

execution of the executable code corresponding to said character so as to display the character on the output apparatus,

characterized in that the step of generating the executable code comprises two substeps:

a step of extracting, from the summary description of said character, a nonexecutable symbolic code defining actions for coloring in points on the output apparatus,

a step of dynamic generation, from said symbolic code, of the executable code.

2. A method as claimed in claim 1, characterized in that the executable generated code is stored in a storage module.

3. The method as claimed in claim 2, which method comprises the following steps:

reception of a request to display said character,

search for an executable code corresponding to said character in the storage module,

decision, depending on the result of the search, to:

when the executable code corresponding to said character is absent from the storage module, generate this code from the summary description of said character, store it in the storage module and execute it so as to display said character on the output apparatus,

when the executable code corresponding to said character is present in the storage module, execute it so as to display said character on the output apparatus.

4. A device intended for controlling the display of at least one character on an output apparatus, a summary description of said character being included in a database accessible to the device, including:

a generation module related to the database and intended to generate an executable code from the summary description of said character,

an execution module, coupled to the storage apparatus and to the output apparatus, said execution module being intended to execute the executable code corresponding to said character so as to display said character on the output apparatus, characterized in that the generation module includes:

means of extracting, from the summary description of said character, a nonexecutable symbolic code defining actions for coloring in points on the output apparatus,

means of dynamic generation, from said symbolic code, of the executable code.

5. A device as claimed in claim 4, in which the device comprises a storage module coupled to the generation module and intended to store the generated executable code.

6. A device as claimed in claim 5, which device comprises:

means of reception of a request to display said character,

means of searching for an executable code corresponding to said character in the storage module,

means of decision, depending on the result of the search for the executable code corresponding to said character, for:

when the executable code corresponding to said character is absent from the storage module, generating this code from the summary description of said character, storing it in the storage module and executing it so as to display said character on the output apparatus,

when the executable code corresponding to said character is present in the storage module, executing it so as to display said character on the output apparatus.

7. An electronic apparatus comprising at least:

means of access to a database containing summary descriptions of characters,

a device intended for controlling the display of at least one character on an output apparatus as claimed in claim 4, said database being accessible to said device,

an output apparatus intended to display at least one character and controlled by the control device.

8. A computer program product for controlling the display of at least one character on an output apparatus intended to display, a summary description of said character being included in a database accessible to the computer, comprising at least a number of instructions necessary for carrying out the steps of the methods described in claim 1.

X. EVIDENCE APPENDIX

No supplemental evidence was provided by appellant to which the examiner entered into the record during the prosecution of this matter.

XI. RELATED PROCEEDINGS APPENDIX

No related proceedings are pending and, hence, no information regarding same is available.

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that is particularly effective for the presentation of photographs.

mapping To associate two objects or

telely Internet Name Domain. A (called DNS server) for Unix-like y BSD and its offshoots. See *BSD*,

ion of thin-film magnetic media, the medium on the surface of a hard h the medium (and sometimes a lied to the substrate by sputtering or

processing and desktop publishing de of a printed page to allow room Binding offset is used only for docu ed on both sides of the page (duplex to the left on verso (left, even e right on recto (right, odd- op publishing (*DTP*).

encoding binary files so that the coded ie standard ASCII characters and, d to other computers via the Internet ust decode the file using BinHex-. BinHex is especially popular among e encoded files can preserve the nat, in which files contain two forks fork). Note that BinHex is not a l that a BinHexed file may actually ile. For this reason, BinHexed files ter they are encoded using the session program, StuffIt. See *ASCII*

ific field devoted to the development nce biological research. A key focus object, which will create a database on all the estimated 80,000–100,000 well as its 3 billion chemical bases. combine academic backgrounds in uputer science.

biological feedback device A device that translates eye movements, body movements, and even brain waves into computer input.

biometric authentication A method of authentication that requires a biological scan of some sort, such as a retinal scan or voice recognition.

BIOS Acronym for Basic Input-Output System. A set of programs encoded in read-only memory (ROM) in IBM PC-compatible computers. These programs handle startup operations such as the Power-On Self-Test (POST) and low-level control for hardware, such as disk drives, keyboard, and monitor. Popular brands of BIOS chips on motherboards sold today include Phoenix Technologies and American Megatrends, Inc. Some system components have their own BIOS chip, whose instructions are also read into the PC's memory at startup. The BIOS on a hard disk controller, for example, stores a table of tracks and sectors on the drive.

B-ISDN See *Broadband ISDN*.

bit The basic unit of information in a binary numbering system (BInary digiT). The electronic circuitry in computers detects the difference between two states (high current and low current) and represent these states as one of the two numbers in a binary system: 1 or 0. These basic high/low, either/or, yes/no units of information are called bits. Because building a reliable circuit that tells the difference between a 1 and a 0 is easy and inexpensive, computers are accurate in their internal processing capabilities, typically making fewer than one internal error in every 100 billion processing operations. Eight bits comprise 1 byte, or octet.

bit depth In a scanner, the length (expressed in bits) of the storage unit used to store information about the scanned image. The greater the bit depth, the better the scanner's resolution. A common bit depth for a home-quality scanner is 30 bits.

bit length In encryption, the length (expressed in bits) of the key used to encode and decode the text data. The greater the bit length, the stronger (less breakable) the encryption.

bitmap The representation of a video image stored in a computer's memory as a set of bits. Each picture element (pixel), corresponding to a tiny dot onscreen, is controlled by an on or

66 bit-mapped font

off code stored as a bit (1 for on, or 0 for off) for black-and-white displays. Color and shades of gray require more information. The bit map is a grid of rows and columns of the 1s and 0s that the computer translates into pixels to display onscreen. See *bit-mapped graphic* and *block graphics*.

bit-mapped font A screen or printer font in which each character is composed of a pattern of dots. To display or print bit-mapped fonts, the computer or printer must keep a full representation of each character in memory. When referring to bit-mapped fonts, the term *font* should be taken literally as a complete set of characters of a given typeface, weight, posture, and type size. If you want to use Palatino (Roman) 12 and Palatino Italic 14, for example, you must load two complete sets of characters into memory. You can't scale bit-mapped fonts up or down without introducing grotesque staircase distortions, called aliasing. See *anti-aliasing*. Compare to *outline font*.

bit-mapped graphic A graphic image formed by a pattern of pixels and limited in resolution to the maximum resolution of the display or printer on which it is displayed. Bit-mapped graphics are produced by paint programs. Considered inferior to vector graphics for most applications, bit-mapped graphics may have aliasing caused by the square shape of pixels. See *Encapsulated PostScript (EPS) file*, *object-oriented graphic*, and *aliasing*. Compare to *vector graphics*.

BITNET A wide area network (WAN) that links mainframe computer systems at approximately 2,500 universities and research institutions in North America, Europe, and Japan. BITNET (an acronym for Because It's Time Network) does not use the TCP/IP protocols but can exchange e-mail with the Internet. BITNET is operated by the Corporation for Research and Educational Networking (CREN), with headquarters in Washington, D.C. To become a member of the network, an organization must pay for a leased line that connects to the nearest existing BITNET site, and it must also agree to let another institution connect with this line in the future. Faced with competition from the Internet, BITNET is slowly dying. See *CERN*.

bits per inch (bpi) In magnetic media, such as backup tape drives or disk drives, a measurement of the medium's recording density.

bits per second (bps) A measurement of data transmission rates frequently used for modems and serial ports. Commonly: 110 bps, 150 bps, 300 bps, 600 bps, 1,200 bps, 1,440 bps, 9,600 bps, 14,400 bps, and 115,200 bps.

black letter In typewriting, German handwriting, and other styles, often are called Fraktur (Frk) because the letters resemble the letters written with pens from the 15th century. The continuous flow of strokes is characteristic of black letter.

black-write technique

blank cell In a spreadsheet, a cell containing no values, labels, or formulas. See *cell* and *default formatting*.

bleed In desktop publishing, bleed refers to the placement of text or graphics beyond the edge of the page. This is done so that the text or graphics will appear on the page even if the page is cut or folded. It is also used to refer to the thumb tab in a book, which is used to hold the pages in place. Bleeding is not possible if you are using a laser printer, as the printer cannot print beyond the edges of the paper.

bleed capability

blessed folder A folder that is automatically selected by the operating system when it is opened. This is done by selecting the folder in the *File* menu (or *Get Info* in Mac OS X) and then clicking the *Bless* button in the *Sharing & Security* tab of the *Get Info* dialog box. This is useful for installing applications, as it allows the user to quickly access the folder without having to remember the name of the application.

blind carbon copy A copy of an e-mail message that is sent to one or more recipients without their knowledge. This is often used to send sensitive information to multiple people without revealing the recipient's identity.

blind certificate A certificate that contains no identifying information about the user. Blind certificates are used to protect the user's identity when the user is using a public key infrastructure (PKI) to communicate with others. The user's identity is usually disguised (such as using a pseudonym) to prevent the user from being identified.

518 swap file

swap file In Microsoft Windows 3.1 and Microsoft Windows 95/98, a large, hidden system file that stores program instructions and data that don't fit in the computer's random access memory (RAM). See *virtual memory*.

swash A character that sweeps over or under adjacent characters with a curvilinear flourish.

switch An addition to an MS-DOS command that modifies the way that the command performs its function. The switch symbol is a forward slash (/), which is followed by a letter. For example, the command DIR /p displays a directory listing one page at a time.

switchable power supply A power supply that lets you use both U.S. and European electrical power to run the computer. Unlike cheap travel converters, which can ruin a PC's electronics, switchable power supplies enable a computer to use either 115-volt 60 Hz U.S. electricity, or 230-volt 50 Hz European electricity.

Sybase, Inc. A major publisher of Unix-based relational database management systems (RDMS) for client/server computing in multiuser enterprise contexts. Based in Emeryville, California, Sybase offers extensive consulting and system integration services to corporations that need sophisticated database management systems.

Symantec The leading publisher of utility software for Macintosh and Microsoft Windows computers, including the well-known Norton AntiVirus and Norton Utilities. Based in Cupertino, California, the company also publishes a number of popular application programs, including Act! (a contact management program), WinFax (a fax program for Microsoft Windows), and pcANYWHERE (a remote control program).

symbolic coding Expressing an algorithm in coded form by using symbols and numbers that people can understand (rather than the binary numbers that computers use). All modern programming languages use symbolic coding.

symmetric key encryption algorithm An encryption algorithm that uses the same key to encode and decode messages. Symmetric key algorithms have many advantages: They require relatively small amounts of computer overhead, and when used

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